CLAIMS

What is Claimed is:

1. A computer system comprising:

(a) an interface for interfacing with at least a first storage device and a second storage device;

(b) said first storage device coupled with said interface;

(c) first indicator means coupled with said first storage device, said first indicator means having a first state for indicating said first storage device is executing a command and having a second state for indicating said first storage device is not executing a command;

(d) said second storage device further coupled with said interface;

(e) second indicator means coupled with said second storage device having a first state for indicating said second storage device is receiving information over said interface and having a second state for indicating said second storage device is not receiving information over said interface.

2. The computer system as recited by claim 1 wherein said first storage device is a hard disk device.

3. The computer system as recited by claim 2 wherein said second storage device is a tape drive device.

4. The computer system as recited by claim 1 wherein said interface is an Intelligent Drive Electronics (IDE) interface.

5. The computer system as recited by claim 4 wherein said first indicator means comprises a bit in a task file register coupled with said first storage device.

6. The computer system as recited by claim 5 wherein said second indicator comprises a bit in a task file register coupled with said second storage device.

7. A computer system comprising:

(a) an interface having a first slot for coupling with a first device and a second slot for coupling with a second device;

(b) a hard disk drive coupled with said interface through said first slot;

(c) a tape drive coupled with said interface through said second slot, said tape drive comprising a first circuit receiving information from said interface and formatting said information for storage on a medium, said first circuit including an indicator having a first state for indicating said tape drive is receiving information over said interface and a second state for indicating said tape drive is not receiving information over said interface.

8. The computer system as recited by claim 7 wherein said interface is an Intelligent Drive Electronics (IDE) interface.

9. The computer system as recited by claim 8 wherein said indicator is a bit in a task file register.

10. The computer system as recited by claim 9 wherein said first circuit further comprises a buffer management means and said tape drive further comprises a buffer memory managed under the control of said buffer management means.

11. The computer system as recited by claim 10 wherein said tape drive further comprises processor means for controlling said first circuit.

12. A computer system comprising:

(a) an 8086 family processor;

(b) a random access memory coupled with said 8086 family processor;

(c) a device interface having a first slot and a second slot;

(d) a central bus for communication information between said 8086 family processor, said random access memory and said device interface;

(e) a hard disk drive coupled with said first slot;

(f) a tape drive coupled with said second slot.

13. The computer as recited by claim 12 wherein said tape drive comprises an indicator having a first state for indicating said tape drive is receiving information over said interface and a second state for indicating said tape drive is not receiving information over said interface.

14. The computer system as recited by claim 13 wherein said device interface is an Intelligent Device Electronics interface.

15. The computer system as recited by claim 14 wherein said tape drive comprises a Cirrus Logic CL-SH-260 controller circuit.

16. In a computer system comprising a host computer having an interface for coupling with a first data storage device and a second data storage device, a method of operating a data archival apparatus comprising the steps of:

(a) said host computer setting a first indicator on said first and second devices, said first indicator indicating said host computer will communicate with said first device;

(b) said host computer communicating first command information to said first device;

(c) setting a second indicator to indicate said interface is busy, said indication preventing said host from communicating command information over said interface;

(d) said host computer communicating information for storage on said first device over said interface;

(e) said first device receiving said information and storing said information in a buffer memory;

(f) completing communication of said information;

(g) clearing said second indicator thereby allowing said host computer to communicate further commands over said interface;

(h) said first device continuing to execute said first command by reading information from said buffer memory and storing said information on a media.

17. The method as recited by Claim 16 wherein said first device is a tape drive and said second device is a disk drive.

18. The method as recited by Claim 17 wherein said host computer is an IBM PC or compatible computer.

19. The method as recited by Claim 18 wherein said interface is the Intelligent Device Electronics interface.

20. In a computer system having a host computer and an interface for coupling a first device and a second device, said host computer including an address space having a interrupt vector address space, a input/output system address space, and an application address space, said interrupt vector address space including a first pointer to a first disk service routine in said input/output address space, said first pointer addressable at a first address, a method of operating a data archival apparatus comprising the steps of:

(a) said host computer initializing a data archival process;

(b) said data archival process reading said first pointer at said first address and storing the value of said first pointer;

(c) said data archival process storing a second pointer at said first address, said second pointer pointing to a second disk service routine in said data archival process;

(d) said data archival process archiving data from said second device to said first device by repetitively issuing commands to read data from said second device and to write data to said first device;

(e) said data archival process writing said stored value of said first pointer to said first address upon completion of said step d; and

(f) terminating said data archival process.

21. The method as recited by Claim 20 wherein said step of reading data from said second device comprises the steps of:

(g) said data archival process calling an operating system routine to read data from said second device;

(h) said operating system routine attempting to call said first disk service routine by accessing said first pointer;

(i) said second disk service routine being called responsive to said step h;

(j) said second disk service routine providing access to said interface to said second device;

(k) said second disk service routine calling said first disk service routine, said first disk service routine managing access to said second device to read data from said second device;

(l) completing said step of reading data from said second device;

(m) said first disk service routine returning control to said first disk service routine;

(n) said first disk service routine providing access to said interface to said first device.

22. The method as recited by Claim 21 wherein said first device is disabled from performing DMA data transfers while reading data from said second device.

23. In a computer system having a host computer and an interface for coupling a first device and a second device, said host computer including an address space having a interrupt vector address space, a input/output system address space, and an application address space, said interrupt vector address space including a first pointer to a first disk service routine in said input/output address space, said first pointer addressable at a first address, a method of operating a data archival apparatus comprising the steps of:

(a) said host computer initializing a data restore process;

(b) said data restore process reading said first pointer at said first address and storing the value of said first pointer;

(c) said data restore process storing a second pointer at said first address, said second pointer pointing to a second disk service routine in said data restore process;

(d) said data restore process restoring data from said first device to said second device by repetitively issuing commands to read data from said first device and to write data to said second device;

(e) said data restore process writing said stored value of said first pointer to said first address upon completion of said step d; and

(f) terminating said data restore process.

24. The method as recited by Claim 23 wherein said step of writing data to said second device comprises the steps of:

(g) said data restore process calling an operating system routine to read data from said second device;

(h) said operating system routine attempting to call said first disk service routine by accessing said first pointer;

(i) said second disk service routine being called responsive to said step h;

(j) said second disk service routine providing access to said interface to said second device;

(k) said second disk service routine calling said first disk service routine, said first disk service routine managing access to said second device to write data to said second device;

(l) completing said step of writing data to said second device;

(m) said first disk service routine returning control to said first disk service routine;

(n) said first disk service routine providing access to said interface to said first device.

25. The method as recited by Claim 24 wherein said first device is disabled from performing DMA data transfers while writing data to said second device.

26. A data archival process for use in a computer system, said computer system having a host computer having an Intelligent Device Electronics (IDE) interface for coupling a first device and a second device, said host computer including an address space having a interrupt vector address space, a input/output system address space, and an application address space, said interrupt vector address space including a first pointer to a first disk service routine in said input/output address space, said first pointer addressable at a first address, said computer

system further including a tape drive coupled with said computer system as said first device and a disk drive coupled with said IDE interface as said second device, a method of operating a data archival apparatus comprising the steps of:

(a) said host computer initializing a data archival process;

(b) said data archival process reading said first pointer at said first address and storing the value of said first pointer;

(c) said data archival process storing a second pointer at said first address, said second pointer pointing to a second disk service routine;

(d) said data archival process archiving data from said disk drive to said tape drive by repetitively issuing commands to read data from said disk drive and to write data to said tape drive;

(e) said data archival process writing said stored value of said first pointer to said first address upon completion of said step d; and

(f) terminating said data archival process.

27. The method as recited by Claim 26 wherein said step of reading data from said disk drive comprises the steps of:

(g) said data archival process calling an operating system routine to read data from said disk drive;

(h) said operating system routine attempting to call said first disk service routine by accessing said first pointer;

(i) said second disk service routine being called responsive to said step h;

(j) said second disk service routine providing access to said interface to said second device;

(k) said second disk service routine calling said first disk service routine, said first disk service routine managing access to said disk drive to read data from said disk drive;

(l) completing said step of reading data from said disk drive;

(m) said first disk service routine returning control to said first disk service routine;

(n) said first disk service routine providing access to said interface to said tape drive.

28. The method as recited by Claim 27 wherein said tape drive is disabled from performing DMA data transfers while reading data from said disk drive.

29. A device for communicating information to a media comprising:

a formatter circuit for receiving information from a host computer in a first format and converting said information to a second format, said second format compatible for writing to a hard disk device;

a format adapter circuit for receiving information in said second format and adapting said second format to a third format compatible for writing to a tape drive.

30. The device as recited by Claim 29 wherein said formatter circuit comprises a Cirrus Logic SH-260 controller circuit.

31. The device as recited by Claim 29 wherein said formatter circuit provides in said second format a signal for turning on writing of an address mark on said media and said format adapter circuit comprises circuitry for receiving said signal for turning on writing of said address mark and provides in said third format three consecutive address marks for writing to said media.

32. A tape backup device compatible for coupling with an IDE interface, said tape backup device comprising a circuit for receiving input signals in a format compatible for writing to a tape drive and for providing output signals in a format compatible for writing data to a tape.

33. The tape backup device of Claim 33 wherein said input signals include a write address mark signal, said circuit receiving said write address mark signal and providing as said output signal three write address mark signals.

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